

Appl. No. 10/693,896
Amendment dated: April 26, 2005
Reply to OA of: February 1, 2005

REMARKS

Applicants have amended the specification and claims to more particularly define the invention taking into consideration the outstanding Official Action. The Examiner objects to the title as not being descriptive. Accordingly, Applicants have amended the title as suggested by the Examiner. The Examiner is further authorized to amend the title to expedite the prosecution to early allowance.

The specification has also been amended on pages 2 and 3 to add the numeral 150 in compliance with 37 CFR 1.121(b). Accordingly, the objection to the specification should be withdrawn. The drawings as originally filed are correct and in view of the amendment to the specification, corrected drawings are not necessary.

The specification has been further amended to add the subject matter from original claim 7 to the specification at page 7, at the end of paragraph [0019] before paragraph [0020] and provide the requested antecedent basis for the claimed subject matter. Since the original claims are part of the specification as filed, this amendment is in full compliance with the written description requirement. Accordingly, this obviates the objection to the specification and it is most respectfully requested that this rejection be withdrawn.

Claim 3 has been amended as required by the Examiner for the informality in connection with line 1, in which "adhesion" must be changed to "adhesive" for proper antecedence to claim 2. Accordingly, claim 3 has been amended thereby obviating this objection. Applicants most respectfully submit that all the claims now present in the application are in full compliance with 35 U.S.C. §112 and are clearly patentable over the references of record.

The provisional rejection of claims 1-11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of copending 10/693,888 and the provisional rejection of claims 12-13 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending 10/693,888 in view of Crane et al. has been carefully considered but is

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most respectfully traversed in view of the Terminal Disclaimer filed in compliance with 37 CFR 1.321(c) to overcome an actual or provisional rejection. Accordingly, it is most respectfully requested that this rejection be withdrawn.

Applicants invention and Application No. 10/693,888 are distinct applications for the following reasons.

In the presently claimed invention, the feature of the invention is that disposing a plurality of solder balls into each of the openings, wherein each of the solder balls has a flux material formed on a surface of each of the solder balls (please refer to claim 1).

Furthermore, the surface of each solder ball has a solid-like flux material or a solid flux material. Accordingly, when the solder balls are disposed in the openings, it will not cause the flux material contaminate the solder ball placer. Moreover said flux material can not make the solder balls connect with each other more securely. Thus it cannot lower the operation efficiency of the solder ball placer (please refer to paragraph [0010]).

However, the feature of Application No. 10/693,888 is that disposing a plurality of solder balls into each of the openings and performing a heating process simultaneously so that the solder balls are bonded to the residual portion of the under bump metallurgy layer temporarily; disposing a flux material above the wafer so as to at least cover the surface of each of the solder balls (please refer to claim 1 of Application No. 10/693,888). When the solder balls 250 are disposed in the openings 232 of the polymer layer 232, the solder balls 250 are heated at a temperature from about 100°C to 150°C by a heater placed below the wafer 210 so that the solder balls 250 are bonded to the under bump metallurgy layer 220 temporarily (please refer to paragraph [0020]). After the solder balls are disposed in the openings of the polymer layer 230, a process of disposing the flux material 240 in the openings 232 to cover the surfaces of the solder balls 250 is performed. Accordingly, it will not cause the flux material 240 contaminate the solder ball placer. Moreover said flux material 240 can not make the solder balls 250 connect with each other more securely. Thus it cannot lower the operation efficiency of the solder ball placer (please refer to paragraph [0022]).

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Based on the above, the presently claimed invention and Application No. 10/693,888 are not double patenting. However, to expedite the prosecution to an early allowance, Applicants submit herewith a timely filed Terminal Disclaimer and the required fee. Accordingly, it is most respectfully requested that this rejection be withdrawn.

In view of the above comments and further amendments to the specification and claims and the filing herewith of a Terminal Disclaimer, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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